B. M. WILKERSON.

Apparatus for Raising and Lowering Articles of Furniture.

No. 197,707. Patented Nov. 27, 1877.

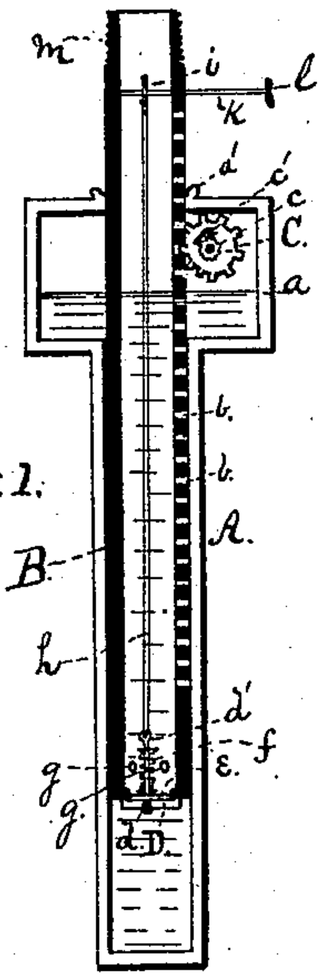
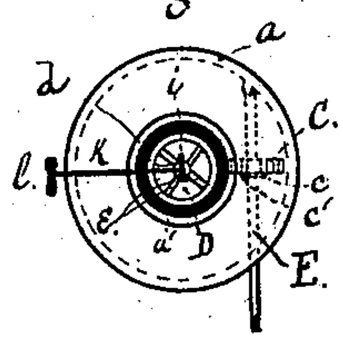


Fig. 1.

Fig. 2.



WITNESSES,

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BASIL M. WILKERSON, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN APPARATUS FOR RAISING AND LOWERING ARTICLES OF FURNITURE.

Specification forming part of Letters Patent No. **197,707**, dated November 27, 1877; application filed November 14, 1877.

To all whom it may concern:

Be it known that I, BASIL M. WILKERSON, of the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Furniture-Stands; and I hereby declare the same to be fully, clearly, and exactly described, as follows, reference being had to the accompanying drawings, in which—

Figure 1 represents a vertical sectional view of my device; Fig. 2, a plan view of the same.

This invention has for its object to furnish a simple, ready, and efficient means of elevating the bodies of certain articles of furniture, such as dental or barbers' chairs, tables, photographic cameras, piano-stools, &c., and of retaining the said bodies in the positions to which they are raised.

To this end I construct my furniture-stand as follows, reference being had to the accompanying drawings.

A represents a metallic tube, closed at the bottom, and having an enlargement, *a*, at the top. B is a tubular plunger, fitting tightly within the tube A, and furnished at the bottom with a pair of valves, D *d*. The valve D is adapted to completely close the lower end of the tubular plunger B, but is considerably smaller than the interior of the tube A, the object of which construction will presently be evident.

In the valve D is fitted a small cone-valve, *d*, having a stem, *d'*. Upon this stem is a collar or pin, between which and the spider *e e*, at the bottom of the plunger, a spiral spring, *f*, is fitted, whereby both valves are held to their seats. The plunger B is perforated with a line of holes, forming a rack, with which the gear-wheel C engages. This latter is mounted upon a shaft, E, which has its bearings in the enlarged portion *a* of the outer tube, the said shaft carrying a ratchet, *c*, with which a pawl, *c'*, on the wheel C engages, and terminating in the ordinary square or polygonal end for the attachment of a crank. The valve-stem *d* is attached to a rod, *h*, which is actuated by an eccentric, *i*, upon the shaft *k*, the latter having a handle, *l*.

The orifice in the enlarged portion *a* of the outer tube is furnished with an annular bead, *a'*, whose function will be presently described.

The upper end of the tube B is threaded, as shown at *m*, for the attachment of the chair-body, table, piano-stool seat, or whatever article of furniture or machine is to be mounted upon the stand.

Legs of tasteful or ornamental design, which I have not considered it necessary to illustrate in the drawing, are attached in any convenient way to the tube A.

The operation of the device is evident from the foregoing description. A suitable quantity of a fluid, preferably some liquid not liable to attack or corrode the metal tube or plunger, such as oil or glycerine, is poured into the main tube to completely fill the portion A. The plunger B, being then inserted therein, as shown, may be raised by means of the pinion C and crank upon the shaft E, or even by a direct lift from the hands in case the article of furniture mounted upon the plunger is light, such as a piano-stool or camera.

It is evident that as the plunger is raised a vacuum is formed below it, causing the liquid to flow through the valves, which liquid constitutes the means of sustaining the plunger at any point to which it has been raised.

In order to lower it, it is only necessary to open the valve at the bottom of the plunger by means of the cam *i* on the shaft *k*, and allow the liquid to flow through the opening, as the plunger descends by its own weight.

The bead *a'* serves to shed any liquid which is carried up in the perforations in the plunger back into the reservoir, instead of allowing it to run over the outside thereof. A pair or more of holes, *g*, near the bottom of the plunger, afford a passage for the liquid when the rack is carried above the level in the reservoir.

It is obviously not essential that the plunger should fit the tube closely throughout its length. It is sufficient if the lower end of the plunger fits accurately in the tube and the upper bearing. In this case the bead *a'* is close enough to prevent shaking. An ordinary leather cup or washer may be used at the lower end of the plunger, to insure a fluid-tight fit. My object in using two valves, D *d*, is to admit of a quick upward movement of the plunger, and a slower downward one, whereby danger of shock in descent is obviated.

While I have illustrated the tube and plunger as round, the shape of their cross-sections may be square or polygonal.

Instead of a hand-lever, a foot-lever may, obviously, be used to actuate the pinion.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a furniture-stand, a fluid-reservoir and a tubular plunger, separate therefrom and communicating therewith by means of an opening furnished with one or more valves, as set forth.

2. In combination with the tube A and reservoir *a*, the perforated plunger B, having valve *d*, substantially as described.

3. In combination with the tube A and reservoir *a*, the tubular plunger B, pinion C, and crank-shaft E, substantially as described.

4. In combination with the hollow plunger B, the double valve D *d*, as and for the purpose described.

BASIL M. WILKERSON.

Witnesses:

FRANK GALT,

R. D. WILLIAMS.